



U.S. Army Corps
Of Engineers
New England District
696 Virginia Road
Concord, MA 01742-2751

Public Notice

Date: February 15, 2007

Comment Period Closes: March 16, 2007

Evaluation Branch, Engineering/Planning Division

Deerfield River Watershed Study Green River Fish Passage and Ecosystem Restoration Greenfield, Massachusetts

Interested parties are hereby notified that the U.S. Army Corps of Engineers, New England District, is proposing an environmental restoration project focusing on four dams on the Green River in Greenfield, Massachusetts (Figure 1). The Massachusetts Executive Office of Environmental Affairs and the City of Greenfield, Massachusetts are the non-federal project sponsors. Authority to conduct the Deerfield River Reconnaissance Study originated with the Senate's recommendation, in the 1998 Energy and Water Appropriations Bill, to "...initiate and complete a reconnaissance study of possible operational or other changes, including the conveyance of Somerset and Searsburg Dams to the Corps, to enhance ecosystem restoration." The authority of this Senate recommendation is based on an original Senate resolution of the Committee on Public Works, adopted on 11 May 1962. As the Deerfield River Reconnaissance Study was initiated, it became apparent that the two dams of interest in the authorization, and their associated lands located in Vermont, had been sold to other private interests as part of a deregulation plan. Both dams continue to generate hydroelectric power and the impoundments are used for recreation. Therefore, no further investigation of these two sites was pursued. However, both the State of Vermont and the Commonwealth of Massachusetts requested that the Corps expand the scope of study to include the remainder of the Deerfield River, a tributary of the Connecticut River. The scope was then reduced when the Vermont interests decided not to continue their involvement leaving only the Massachusetts segment. Through the involvement of the Commonwealth of Massachusetts, Executive Office of Environmental Affairs and its watershed initiative, the reconnaissance study was completed with the focus becoming the four Green River dams located in Greenfield, Massachusetts. The Detailed Project Report for this project recommends implementing the project under the authority provided by Section 206 of the Water Resources Development Act of 1996 (PL 104-303), which provides authority for the Secretary of the Army to implement aquatic ecosystem restoration projects that improve the quality of the environment, are in the public interest, and are cost effective. This public notice provides information about the environmental restoration project and documents compliance with all applicable Federal laws and regulations.

Purpose and Need for Work: Four dams create impoundments along 8.7 miles of the Green River from its confluence with the Deerfield River (Figure 1). The dams block the upstream migration of pre-spawning adult anadromous fish to their historic spawning areas and the downstream migration

of adults and juvenile fish to the ocean. Similarly, the dams preclude catadromous fish, which live in freshwater and spawn in the ocean, from accessing their primary habitat. The sectioning of the river also impacts freshwater fish that move to faster flowing streams in the watershed to spawn. The impoundments created by the dams reduce the area of spawning habitat for anadromous and riverine fish by removing pool-riffle patterns, eliminating in-stream cover, and maintaining unsuitable flow regimes and water depth. Thus, the dams have degraded fisheries and riverine habitats.

Fish species that would benefit from improved fish passage and habitat restoration include: Atlantic salmon (*Salmo salar*), American shad (*Alosa sapidissima*), blueback herring (*Alosa aestivalis*), sea lamprey (*Petromyzon marinus*), and American eel (*Anguilla rostrata*). Other species that would benefit include: brown trout (*Salmo trutta*), rainbow trout (*Oncorhynchus mykiss*), brook trout (*Salvelinus fontinalis*), white sucker (*Catostomus commersoni*), redbreast sunfish (*Lepomis auritis*), bluegill (*Lepomis macrochirus*), and yellow perch (*Perca flavescens*).

Project Description: The recommended plan consists of the removal of the Wiley & Russell and Mill Street Dams and installation of fish passage structures at Swimming Pool Dam and Pumping Station Dam. The recommended plan would extend migratory and spawning habitat for anadromous fish over a distance of 30 river miles. The estimated implementation cost for the recommended plan is \$2,053,000, which would be cost shared 65 percent Federal and 35 percent non-Federal. Operations and maintenance of the project would be a non-Federal responsibility and are estimated to cost \$12,000 per year over the 50-year life of the project.

Alternatives Analysis: The study considered alternative methods to restore fish passage at each of the dams along the Green River. Brief descriptions of the alternatives are provided below. In addition, the study considered in-stream habitat restoration at certain sites on the river, however the habitat value of improvements they offered did not compare well with those associated with fish passage.

Descriptions of Fish Passage Alternatives

Dam Removal

The dam removal alternative would involve complete or partial removal of a dam to create unimpeded access for fish to travel upstream and downstream on the Green River and would allow riverine and riparian habitats along the river to be restored. Dam removal would eliminate the impoundments behind the dams and change downstream river flow. Dam removal allows the most efficient fish passage, as well as allowing river channel restoration.

Rock Ramp Fishway

A rock ramp fishway is a specially engineered arrangement of boulders and cobbles that creates step pools with flow patterns sized to allow fish to climb gradually upward from its toe to its crest and over a dam or other obstacle fronted by the rock ramp. The substructure serves to buttress the dam and support the rocks that comprise the face of the ramp. Rows of boulders are arranged in a chevron pattern, angled downstream, where the largest boulders are placed near the river banks and the remaining boulders in each row become

progressively smaller until the river channel centerline is reached. This focuses the low flows to the center of the channel as they go down the rock ramp and gradually spreads higher flows so that there is always a location on the rock ramp where fish can climb successfully. Rock ramp fishways allow impoundments to remain, but are not as effective at passing fish as dam removal.

Fish Ladder

A fish ladder is a structure designed to allow fish to pass over a dam. Fish ladders allow impoundments behind a dam to remain in place, but do not pass all species of fish as effectively as dam removal.

Fish Passage Alternatives

Wiley and Russell Dam Alternatives

- a) no action (maintain existing condition)
- b) remove dam or partial breach of dam
- c) construct fish ladder
- d) construct rock ramp fishway

Mill Street Dam Alternatives

- a) no action (maintain existing condition)
- b) remove dam or partial breach of dam
- c) construct fish ladder

Swimming Pool Dam Alternatives

- a) no action (maintain existing condition)
- b) construct fish ladder

Pumping Station Dam

- a) no action (maintain existing condition)
- b) construct fish ladder

Coordination: The proposed work is being coordinated with the following Federal, State and local agencies:

Federal

U.S. Fish and Wildlife Service
U.S. Environmental Protection Agency
National Marine Fisheries Service

State

Massachusetts Department of Environmental Protection

Bureau of Resource Protection
Division of Watershed Management
Massachusetts Department of Conservation and Recreation (Formerly Department of
Environmental Management)
Massachusetts Department of Fish and Game
Division of Fisheries and Wildlife
Natural Heritage & Endangered Species Program
Riverways Program
Massachusetts Executive Office of Environmental Affairs
MEPA Office
Massachusetts Historic Preservation Office

Tribal Governments

Narragansett Tribal Historic Preservation Officer (NTHPO)
Stockbridge-Munsee Tribal Historic Preservation Officer (SMTHPO)
Wampanoag Tribal Historic Preservation Officer (WTHPO)

Local and Regional

City of Greenfield
Franklin Regional Council of Governments

Endangered Species: Coordination with the U.S. Fish and Wildlife Service has indicated that no federally listed or proposed, threatened or endangered species under its jurisdiction are known to occur in the study area, with the exception of occasional transient bald eagles (*Haliaeetus leucocephalus*). Coordination with the National Marine Fisheries has also indicated that there are no threatened or endangered species expected to be present within that region of the Connecticut River Watershed. Although shortnose sturgeon occupy sections of the Connecticut River in the latitude of the Green River, they have not been documented in the Green River.

Essential Fish Habitat: Impacts to Essential Fish Habitat (EFH) in the project area were avoided or minimized to the maximum extent practicable through the planning and design process. The National Marine Fisheries Service will be providing comments on the project's essential fish habitat assessment pursuant to the Magnuson-Stevens Fisheries Conservation Act. The project is expected to benefit EFH for Atlantic salmon in the Connecticut River by providing passage to upstream spawning habitat in the Green River and its tributaries, as well as EFH for estuarine and marine species by providing additional habitat for alosid (shad, alewife and blueback herring) species which are food for many of these federally managed EFH species.

Environmental Impacts: The Corps of Engineers prepared an Environmental Assessment (EA) for this environmental restoration project. A preliminary determination was made that an Environmental Impact Statement for the proposed restoration is not required under the provisions of the National Environmental Policy Act of 1969.

Cultural Resources: The Green River is considered archaeologically sensitive for the presence of prehistoric archaeological sites dating from the Middle Archaic to the Contact Periods. The Wiley & Russell Dam was determined to be a contributing element to the Greenfield Tap and Die Plant No. 1, a district eligible for the National Register (NR). The Green River was used for hydropower for other industries during Greenfield's history. The other three dams considered in this study are

not eligible for the NR. The Corps of Engineers will continue coordination with the SHPO and THPOs regarding the impacts of the project on cultural and historic resources.

Federal Consistency with Coastal Zone Management: Not applicable; the project is not located in the coastal zone.

Other Federal Permit Requirements: A Water Quality Certificate application will be submitted to the Massachusetts Department of Environmental Protection under Section 401 of the Clean Water Act of 1977 (P.L. 95-217). A Section 404(b)(1) evaluation, pursuant to the Clean Water Act, is provided as an attachment to the draft DPR/EA.

Compliance: This Public Notice is being issued in compliance with several environmental laws and regulations (see Attachment A).

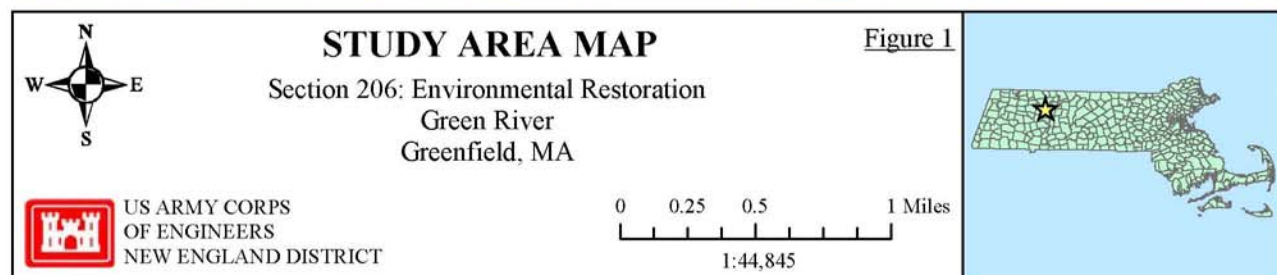
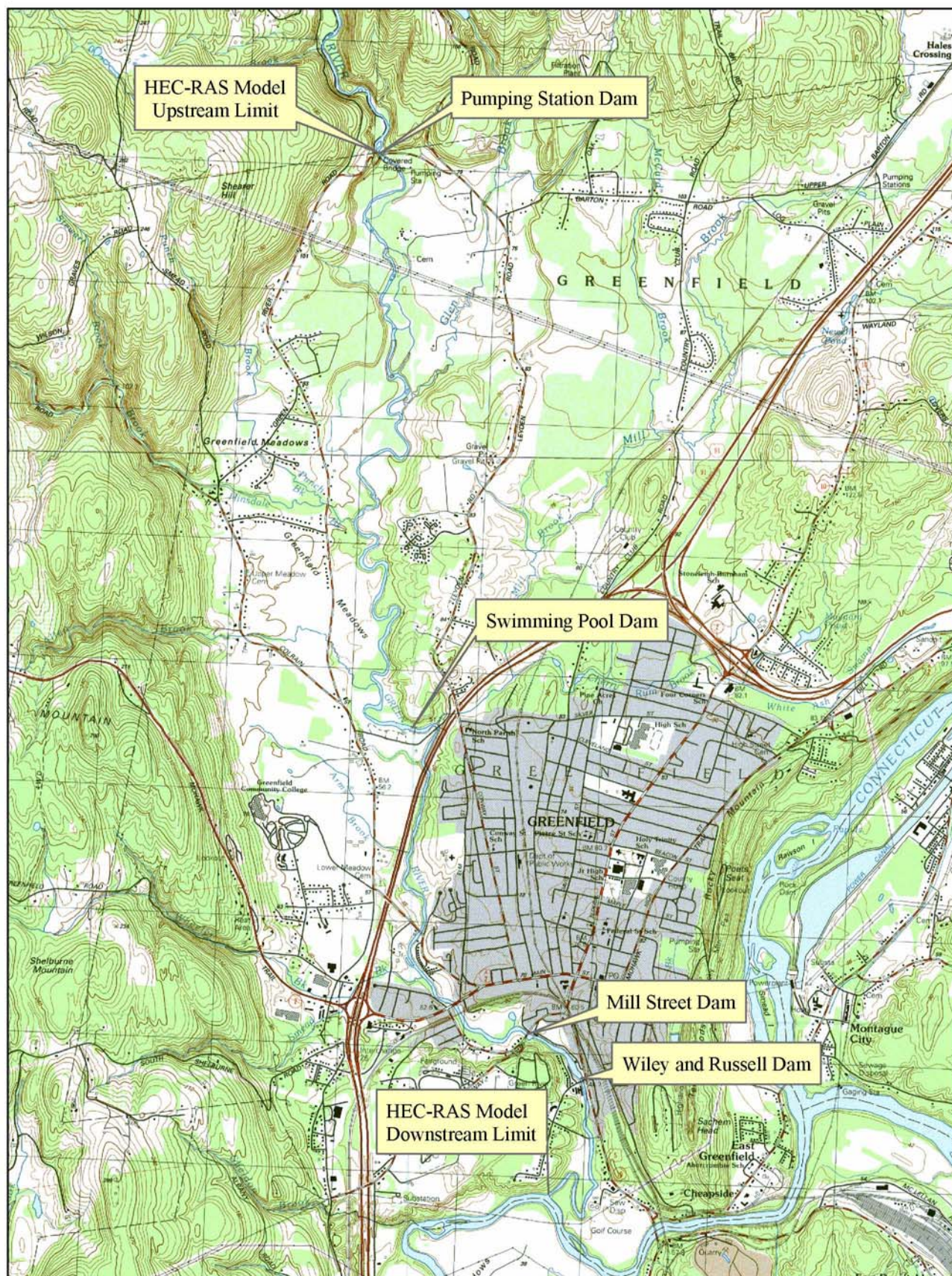
Availability of the Draft Report and Environmental Assessment: Copies of the draft report and environmental assessment are available upon request by contacting the project manager, David Larsen at 978-318-8113.

Additional Information: Any person who has an interest that may be affected by this restoration project may request a public hearing. The request must be submitted in writing to me within 30 days of the date of this notice and must clearly set forth the interest that may be affected and the manner in which the interest may be affected by this activity.

Public Comments: Comments are invited from all concerned parties and should be directed to the District Engineer at 696 Virginia Road, Concord, MA 01742-2751, ATTN: Engineering/Planning Division (Mr. David Larsen), within 30 days of this notice. Please bring this notice to the attention of anyone you know to be interested in the project.

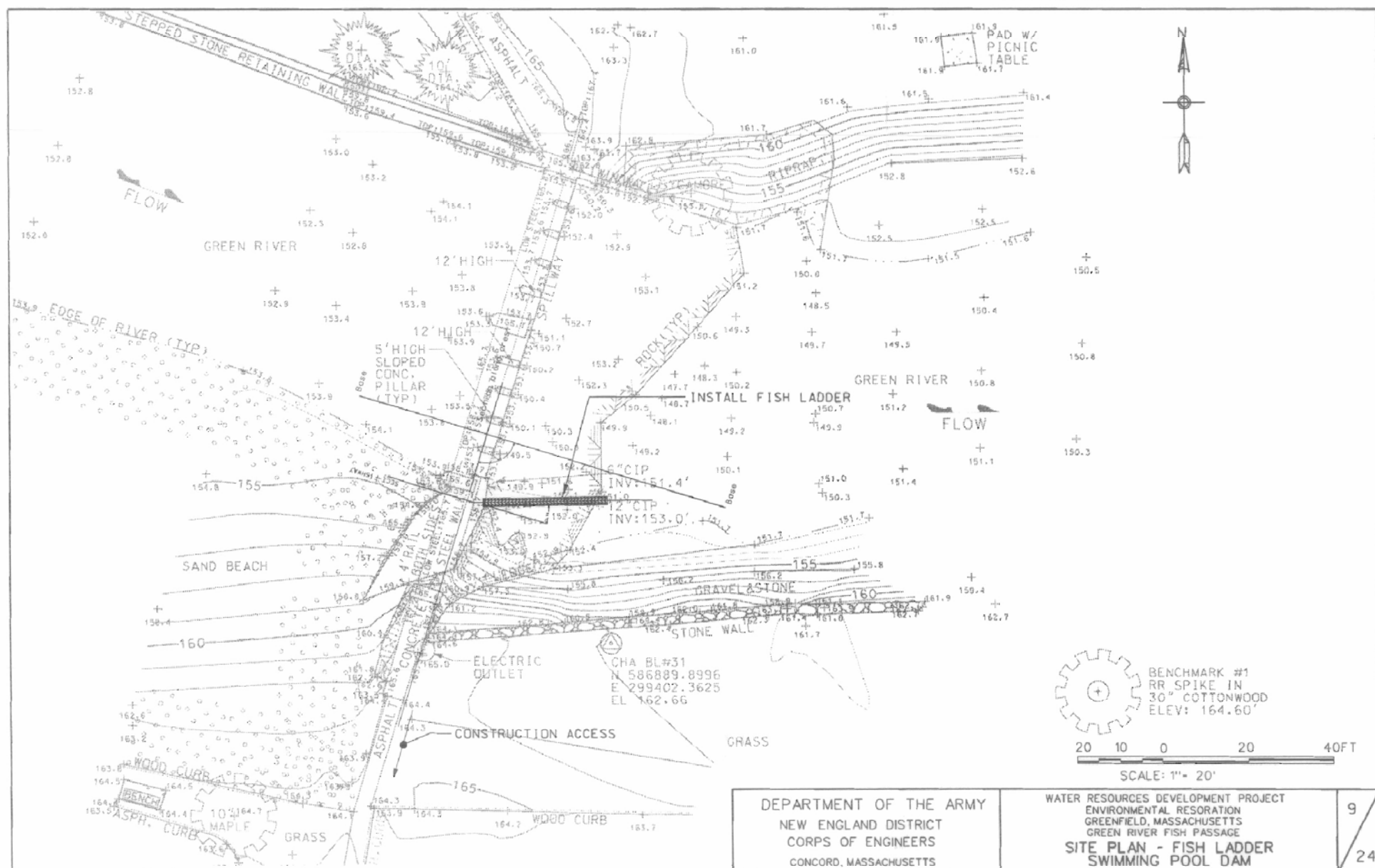
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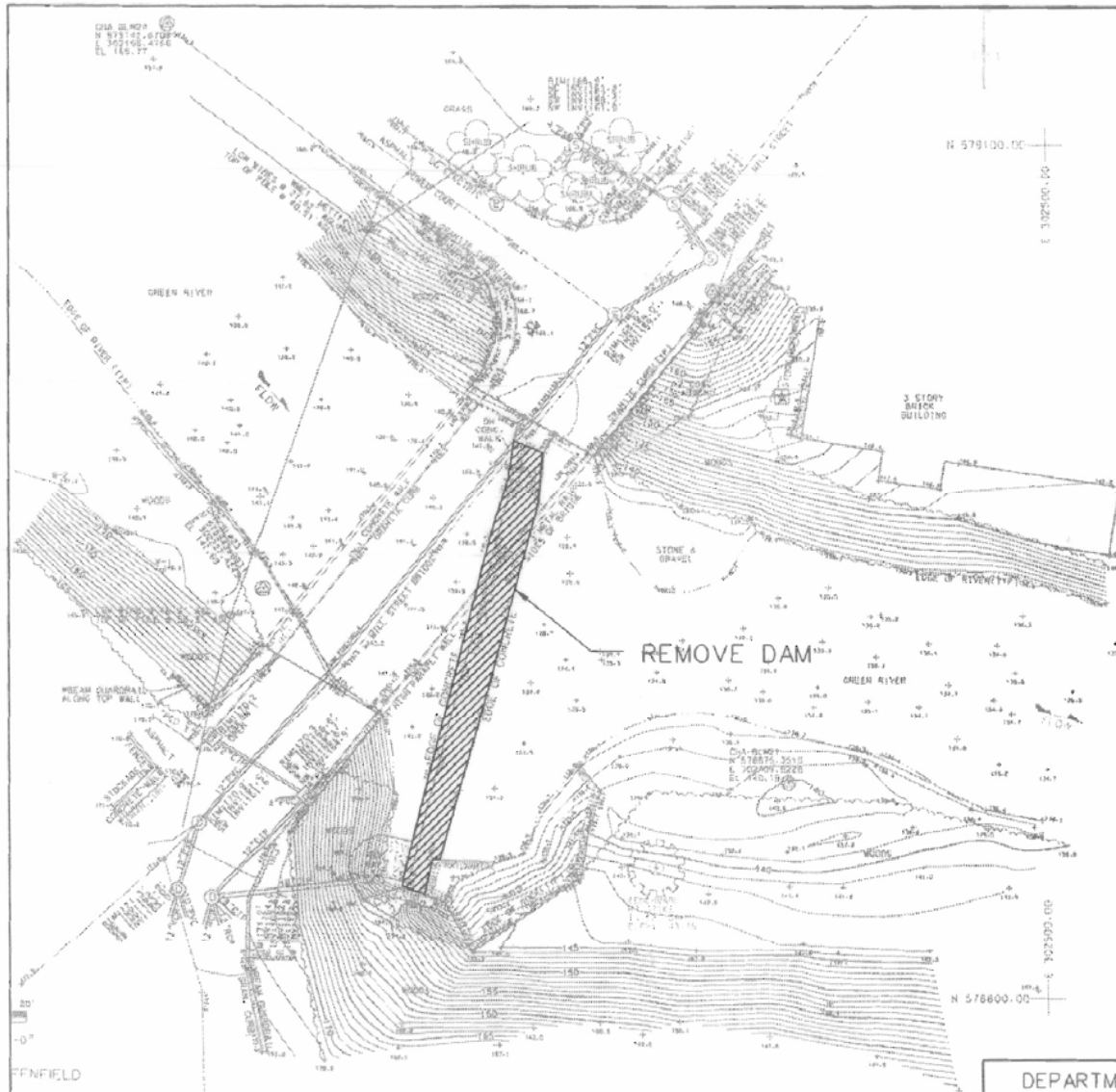
Curtis L. Thalken
Colonel, Corps of Engineers
District Commander





WATER RESOURCES DEVELOPMENT PROJECT
ENVIRONMENTAL RESORATION
GREENFIELD, MASSACHUSETTS
GREEN RIVER FISH PASSAGE
SITE PLAN - FISH LADDER
PUMPING STATION DAM

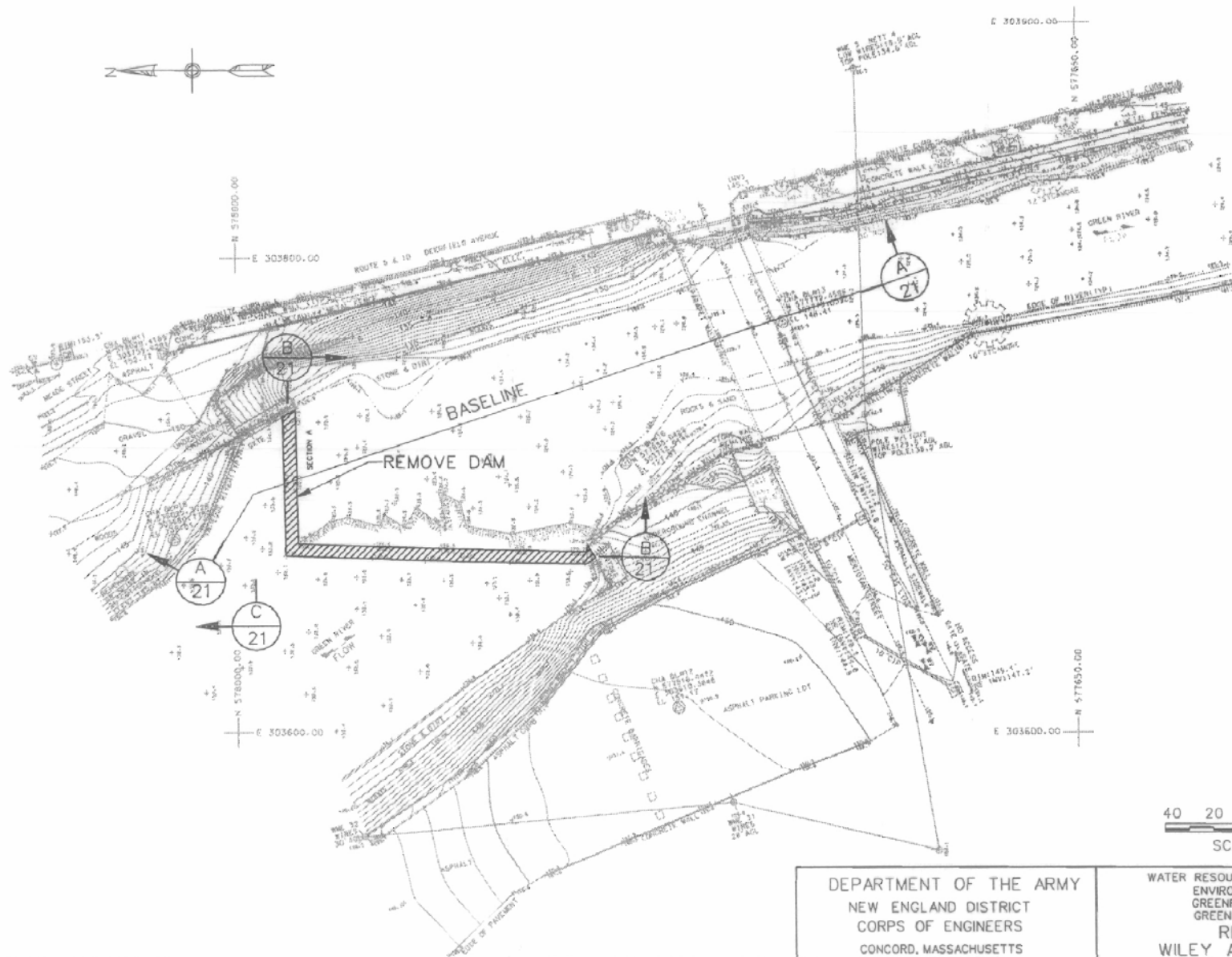




DEPARTMENT OF THE ARMY
NEW ENGLAND DISTRICT
CORPS OF ENGINEERS
CONCORD, MASSACHUSETTS

WATER RESOURCES DEVELOPMENT PROJECT
ENVIRONMENTAL RESORATION
GREENFIELD, MASSACHUSETTS
GREEN RIVER FISH PASSAGE
REMOVE DAM
MILL STREET DAM

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DEPARTMENT OF THE ARMY
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CONCORD, MASSACHUSETTS

WATER RESOURCES DEVELOPMENT PROJECT
ENVIRONMENTAL RESORATION
GREENFIELD, MASSACHUSETTS
GREEN RIVER FISH PASSAGE
REMOVE DAM
WILEY AND RUSSELL DAM

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Attachment A

PERTINENT FEDERAL LAWS, REGULATIONS AND DIRECTIVES

Clean Air Act, as amended (42 U.S.C. 1221 et. seq.)

Clean Water Act, as amended (33 U.S.C. 1251 et. seq.)

Endangered Species Act of 1973, as amended (16 U.S.C. 668aa-668cc)

Executive Order 11988, Floodplain Management, 24 May 1977

Executive Order 11990, Protection of Wetlands, 24 May 1977

Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, February 11, 1994.

Executive Order 13007, Accommodations of Sacred Sites, May 24, 1996.

Executive Order 13045, Protection of Children from Environmental Health Risks and Safety Risks, April 21, 1997.

Fish and Wildlife Coordination Act (16 U.S.C. 661-666c)

Magnuson-Stevens Fishery Conservation and Management Act and amended by the Sustainable Fisheries Act of 1996

National Environmental Policy Act of 1969 (42 U.S.C. 4321-4347)

National Historic Preservation Act of 1966, as amended, 16 U.S.C. 470 et seq.

White House Memorandum, Government-to-Government Relations with Indian Tribes, April 29, 1994.

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OF ENGINEERS
New England District

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